Abstract Submitted
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Scanning SQUID imaging of Sr_2RuO_4 and $PrOs_4Sb_{12}$[1] CLIFFORD HICKS, JOHN KIRTLEY, Department of Applied Physics, Stanford University, MARTIN HUBER, University of Colorado Denver, KATHRYN MOLER, Department of Applied Physics, Stanford University — We present scanning SQUID magnetometer data on the superconducting materials strontium ruthenate (Sr_2RuO_4) and praseodymium-osmium-antimonide ($PrOs_4Sb_{12}$), both of which are believed to have spin-triplet pairing and to generate spontaneous time-reversal-symmetry-breaking fields below their superconducting transition temperatures. Our images, taken with a SQUID with a resolution of 3μm and approximately 100μG, do not show evidence for spontaneous TRSB fields, in contrast with muon spin rotation data which indicates gauss-scale fields in both materials. The fields indicated by μSR data must therefore have a short length scale and/or a short time scale. Supposing that the TRSB fields are static with the magnitudes indicated by μSR data we place upper limits on their length scales in both Sr_2RuO_4 and $PrOs_4Sb_{12}$. We also place upper limits on the strength of any distributed fields that might exist at sample edges and order parameter domain walls.

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